Shantanu Shinde

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EDUCATION

University of Texas at Dallas, Richardson, TX, United States — Expected: May 2026
Master of Science, Computer Science — **GPA 3.55**

- Dean's Scholarship
- Coursework: Database Design, Machine Learning, Statistical Methods for Data Science, Big Data Management and Analytics, Natural Language Processing, Design and Analysis of Algorithms

Indian Institute of Information Technology, Nagpur, MH, India — June 2021
Bachelor of Technology, Computer Science and Engineering — **GPA 3.75**

- Relevant Coursework: Neural Networks and Deep Learning, Database Management Systems, Artificial Intelligence, Soft Computing, Design and Analysis of Algorithms, Numerical Methods and Probability Theory

TECHNICAL SKILLS

Programming Languages: C++, Python, C#, Java, Javascript
Tools & **Frameworks**: Kubernetes, Apache Spark, .NET, Azure Dev Ops, pytorch, tensorflow, Unreal Engine, Unity3D, Springboot, git, gRPC
Certifications: Deep Learning Specialization, Advanced Data Science Specialization, Reinforcement Learning Specialization

WORK EXPERIENCE

University of Texas at Dallas, Richardson, TX, US — September 2024 – Present
CS Outreach Instructor

- Helping to conduct coding workshops and events for school students.
- Acting as an instructor to present and teach workshop materials and resolve doubts.

NI (National Instruments) (Emerson), Bangalore, India — January 2021 – June 2024
Software Engineering Intern, Software Engineer, Staff Software Engineer

- Developed a prototype chatbot for NI Customer Support using GPT-3, Python, Prompt-Engineering, chatbot web interface using NodeJS.
- Worked on a Similar Yammer post detector that searched for the most similar yammer post using BERT vector outputs and cosine similarity. Integrated that into a Yammer group using Power Automate, gRPC, Azure Function App and Azure Container Instance.
- Helped with development of gRPC API wrappers for NI Device Driver APIs using Python, C++, LabVIEW and wrote automated tests for it using gtest.
- Implemented web service for LabVIEW web interface using C++.
- Worked on developing Hardware Configuration Utility using .NET Core.
- Implemented Hardware Licensing Activation API using Java, Springboot, Kubernetes, Micro Service architecture, Maven and Azure Pipeline for deployment, MuleSoft for proxy API.
- Updated NI Volume License Manager to use SQLite database in place of SQL CE database using C# .NET, SQLite, SQLite encryption library and wrote automated testing for it using XUnit and Moq.

International Institute of Information Technology, Hyderabad, India — May 2019 – August 2019
Summer Intern

- Developed 3D simulation web application using JavaScript 3D library.
- Implemented Image Processing and Computer Vision web application using Python, OpenCV, Flask.
- Received a letter of commendation for good performance.

ACADEMIC & PERSONAL PROJECTS

Natural Speech to SQL query converter, University of Texas at Dallas August 2024 – December 2024
Tools Used: Python, hugginface, pinecode RAG, git, openai

- Developed a workflow for converting natural language speech instructions into SQL queries.
- Used Wave2Vec to convert speech to text.
- Created vectorized embeddings of spider dataset schemas and created a vector search for them using pinecone framework to work as RAG.
- Utilizing the created RAG to fetch the appropriate schema based on the input text.
- Made use of Open AI GPT-4 to convert the text into SQL query with the added context of the schema.

Support Bot, January 2023 – June 2023
NI (National Instruments) (Emerson)
Tools Used: Python, OpenAI, NodeJS, React, Flask

- Used OpenAI library and GPT-3 model to answer customer support related questions regarding the company.
- Utilized Prompt Engineering to answer questions that are only related to company and also give answers so that they relate to the company and reference company products.
- Made use of one-shot learning to have the outputs in proper html format with proper table tags and list tags.
- Created a chatbot UI interface using NodeJS and React.
- Integrated the UI with the backend using Flask server.

Grounded Language Learning on Colour Semantics, July 2020 – December 2020
Indian Institute of Information Technology Nagpur
Tools Used: Python, Google Colab, pytorch, keras,

- Read various research papers on the problem.
- Experimented use of LSTMs to train a RNN deep learning model to understand grounded meaning of color description.
- Developed an encoder-decoder model, with encoder mapping color description to color's RGB value and decoder mapping RGB back to description.
- Evaluated the model over various metrics.

Character Recognition using CNN, Personal December 2018 – August 2019
Tools Used: Python, keras, git, Google Colab

- Collected a large dataset of handwritten English letters. Cleaned the data.
- Checked the data for bias towards certain letters. Generated augmented data to reduce the bias.
- Trained CNN deep learning models based on the ResNet and LeNet model on the data.
- Fine-tuned and adjusted hyper-parameters of the model for observing its effect on the performance.
- Achieved a testing score of 95% on the final model.
- Used Suzuki 85 computer vision algorithm for extracting characters from an image containing text.
- Programmed a workflow to first extract the characters from image and then pass it to the model to classify the letter.

HONORS & AWARDS

Top presentation at NI Tech 2022, NI (National Instruments), Bangalore June 2022
Rookie of the Year, NI Global R&D Excellence Awards 2022, NI (National Instruments), Bangalore November 2022
First position in competitive coding competition, Indian Institute of Information Technology, Nagpur March 2019